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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/613,071

07/07/2003

Lars Ivar Samuelson

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8530

181

7590

09/13/2004

MILES & STOCKBRIDGE PC  
1751 PINNACLE DRIVE  
SUITE 500  
MCLEAN, VA 22102-3833

EXAMINER

JACKSON JR, JEROME

ART UNIT

PAPER NUMBER

2815

DATE MAILED: 09/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<p align="center"><b>Office Action Summary</b></p>	<p><b>Application No.</b></p> <p align="center">10/613,071</p>	<p><b>Applicant(s)</b></p> <p align="center">SAMUELSON ET AL.</p>	
	<p><b>Examiner</b></p> <p align="center">Jerome Jackson Jr.</p>	<p><b>Art Unit</b></p> <p align="center">2815</p>	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-137 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-137 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

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Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-8,17-25,80-85,94-115,119-134,137, drawn to a nanowhisker with lattice strain, classified in class 257, subclass 117.
- II. Claims 9-16,116-118,135,136, drawn to a nanowhisker with ABC, classified in class 257, subclass 117.
- III. Claims 26-31, drawn to a nanowhisker with tunneling and e,b,c, classified in class 257, subclass 25.
- IV. Claims 32,33,40, drawn to a nanowhisker with doped e,b,c, classified in class 257, subclass 22.
- V. Claim 34, drawn to a single photon emitter, classified in class 257, subclass 13.
- VI. Claims 35-37, drawn to an led with different bandgap segments, classified in class 257, subclass 13.
- VII. Claim 38, drawn to a structure with excitation of bio material, classified in class 257, subclass 414.
- VIII. Claim 39, drawn to an apparatus for patterning, classified in class 438, subclass 15+.
- IX. Claim 41, drawn to a pin diode nonowhisker, classified in class 257, subclass 21.
- X. Claims 42,43, drawn to a solar cell, classified in class 136, subclass 252.
- XI. Claim 44, drawn to a terahertz source with superlattice, classified in class 257, subclass 17.

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- XII. Claims 45-48, drawn to a photonic crystal, classified in class 257, subclass 21.
- XIII. Claims 49-51,53-55,57,58, drawn to a method, classified in class 438, subclass 15+.
- XIV. Claim 52, drawn to a layered structure with a mask, classified in class 257, subclass 17.
- XV. Claim 56, drawn to a layered structure with a V-shaped groove, classified in class 257, subclass 17.
- XVI. Claim 59, drawn to a nanowhisker in <111> direction, classified in class 257, subclass 627.
- XVII. Claims 60,61, drawn to a field display, classified in class 257, subclass 10.
- XVIII. Claim 62, drawn to an antenna, classified in class 257, subclass 13.
- XIX. Claims 63-69, drawn to process with molten catalytic seed, classified in class 438, subclass 15+.
- XX. Claims 70,71, drawn to an electrode structure with nanowhiskers, classified in class 257, subclass 12.
- XXI. Claims 72,73, drawn to oxidized nanowhisker, classified in class 257, subclass 17.
- XXII. Claims 74,75,79, drawn to a cantilever beam array, classified in class 257, subclass 414.
- XXIII. Claims 76-78, drawn to oscillating signal nanowhisker, classified in class 257, subclass 17.

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XXIV. Claims 86-93, drawn to methods with supply and discontinuous supply, classified in class 438, subclass 15+.

The inventions are distinct, each from the other because of the following reasons:

Inventions I-XII, XIV-XVIII and XIII, XIX, XXIV are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the products as claimed can be made by a materially different processes such as MBE growth without seeds.

Inventions I and II are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention I has separate utility such as in a device without ABC material. See MPEP § 806.05(d).

Inventions III and IV are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention III has separate utility such as in a device with one type doping. See MPEP § 806.05(d).

Inventions V and VI are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention VI has separate utility such as in a device which emits more than one photon. See MPEP § 806.05(d).

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Inventions VII and VIII are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention VII has separate utility such as in a device with bio material. See MPEP § 806.05(d).

Inventions IX and X are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention IX has separate utility such as in a device without a transparent electrode. See MPEP § 806.05(d).

Inventions XI and XII are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention XII has separate utility such as in a device without a superlattice. See MPEP § 806.05(d).

Inventions XIV and XV are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention XIV has separate utility such as in a device without a V-groove. See MPEP § 806.05(d).

Inventions XVI and XVII are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention XVII has separate utility such as in a device with an orientation not in the  $\langle 111 \rangle$  direction. See MPEP § 806.05(d).

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Inventions XVIII and XX are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention XX has separate utility such as in a device with a length not one-quarter of a wavelength. See MPEP § 806.05(d).

Inventions XXI and XXII are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention XXII has separate utility such as in a non-oxidised device. See MPEP § 806.05(d).

Inventions XXIII and XXII are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention XXII has separate utility such as in a device without a cantilever. See MPEP § 806.05(d).

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

This application contains claims directed to the following patentably distinct species of the claimed invention: A. claims 2,18,109 and 128 drawn to a constant diameter. B. claims 3,19,110,129 drawn to a changing diameter. C. claims 8,24,114,133 and 134 drawn to a plurality of whiskers. D. claim 80. E. claim 81 F. claim 82. G. claim 83. H. claim 84 I. Claim 85. J. claim 95. K. claim 96. L. claim 97. M. claim 98. N.99.

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O.100. P.101. Q.102. R. 103. S.104. T.105. U.106. V.107 W.120. X. 121. Y. 122. Z.  
123. AA. 124. AB. 125. AC. 126. AD. 10. AE. 11. AF. 16. AG. 30. AH.31.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claims 1, 9,26,94,119 are generic to certain groups of the above claims.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.



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Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jerome Jackson Jr. whose telephone number is 571 272 1730. The examiner can normally be reached on t-th 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on 571 272 1664. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
JEROME JACKSON  
PRIMARY EXAMINER